REMARKS

Status of Claims

Claims 1-30 remain pending with claims 1, 11, 20, and 25 being independent. Applicants present new claim 31 for consideration.

New Claim 31

Applicants present new claim 31. The claim recites a many-to-one switching device to couple serverlets to a single bus interface. For example, FIG. 5 and depicts a 4:1 switching unit 122 that couples the serverlets 112-118 to a bus such as a SCSI bus (see also FIG. 7). In rejecting claim 1, the Examiner has identified the diskarray switches 20 of Matsunami (U.S. 6,542,961) as providing the recited first switching device to couple serverlets to I/O resources. However, the switches 20 of Matsunami are many-to-many switches, not the many-to-1 switches recited by claim 31.

Claim 1, 11, & 20

Independent claims 1, 11, and 20 each recite a module that comprises serverlets, a switch to couple the serverlets to a switch fabric, and a switch to couple the serverlets to I/O resources. The Examiner has rejected these claims based on a combination of Chow (U.S. 6,148, 349) and Matsunami (U.S. 6,542,961). In particular, the Examiner identified module 226 of Chow as the recited module and item 802 in FIG. 8 as the switch coupling the module serverlets to a switch fabric. Applicants understand the Examiner's interpretation of interface 802 as being a monolithic interface directly coupled to multiple compute nodes and IONs. Under this interpretation, the interface 802 is not part of the same module 226 comprising the serverlets. That is, multiple modules 226 plug into the same interface 802. Additionally, under an alternate interpretation of Chow where each module 226 is associated with its own interface 802, such an interface 802 would not constitute a switch between different serverlets.

Additionally, Applicants continue to disagree that one of skill in the art would combine Chow and Matsunami in the manner proposed. Again, Chow emphasizes that "at any given time both IONs 212 and 214 in a dipole 226 must be able to access all devices" (col. 8, lines 63-67). Chow achieves this continuous access by providing each ION with direct dedicated connections with each JBOD (see FIG. 1 of Chow). The use of Matsunami's crossbar switch would undermine this aspect of Chow that the Examiner acknowledges as an important feature. In addition to delay due to contention in the use of the crossbar switch such a proposed system would likely feature arbitration logic to address fairness issues, potentially scheduling logic, and other complexity in the service of preventing the continuous device access that is a stated goal of Chow.

As such, Applicants respectfully request withdrawal of the rejection of claim 1 and its independent claims. Similarly, Applicants respectfully request withdrawal of independent claims 11 and 20 and their respective independent claims.

Claim 25

Claim 25 recites a switching device to couple serverlets to at least one disk system via a bus. The Examiner identified data bus 34 of Hipp (U.S. 6,325,636) as providing the recited bus. The Examiner also suggested modifying a combination of Chow and Hipp based on Johnson (U.S. 4,627,050). Johnson teaches a TDM bus (time division multiplexed) bus where entities communicate by inserting data into different timeslots. The Examiner seems to propose converting the passive midplane of Hipp 34 to the TDM bus of Johnson and correspondingly adding TDM circuitry to the cards of Hipp "to increase throughput for connected modules." Applicants however do not understand how converting the passive midplane of Hipp into a TDM bus would increase throughput and respectfully ask for an explanation. Applicants assert that to the extent that the scheme of Johnson requires additional information overhead to be carried by the bus (e.g., a "from" address col. 3, lines 28-42) that would actually reduce effective data throughput for a given bus capacity. As such, Applicants respectfully request withdrawal of the rejection of claim 25 and its dependent claims.

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Respectfully submitted,

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